



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/674,224	09/29/2003	Jose M. Sosa	API- 1018-US	2510
7590	04/03/2006		EXAMINER	
Fina Technology, Inc. P. O. Box 674412 Houston, TX 77267-4412			ASINOVSKY, OLGA	
			ART UNIT	PAPER NUMBER
			1711	

DATE MAILED: 04/03/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	S	
	10/674,224	Applicant(s) SOSA ET AL.	
	Examiner Olga Asinovsky	Art Unit 1711	
<i>-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --</i>			
Period for Reply			
A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.			
<ul style="list-style-type: none"> - Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication. - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication. - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b). 			
Status			
<p>1)<input checked="" type="checkbox"/> Responsive to communication(s) filed on <u>25 January 2006</u>.</p> <p>2a)<input type="checkbox"/> This action is FINAL. 2b)<input checked="" type="checkbox"/> This action is non-final.</p> <p>3)<input type="checkbox"/> Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under <i>Ex parte Quayle</i>, 1935 C.D. 11, 453 O.G. 213.</p>			
Disposition of Claims			
<p>4)<input checked="" type="checkbox"/> Claim(s) <u>1-9 and 12-27</u> is/are pending in the application.</p> <p>4a) Of the above claim(s) _____ is/are withdrawn from consideration.</p> <p>5)<input type="checkbox"/> Claim(s) _____ is/are allowed.</p> <p>6)<input checked="" type="checkbox"/> Claim(s) <u>1-9 and 12-27</u> is/are rejected.</p> <p>7)<input type="checkbox"/> Claim(s) _____ is/are objected to.</p> <p>8)<input type="checkbox"/> Claim(s) _____ are subject to restriction and/or election requirement.</p>			
Application Papers			
<p>9)<input type="checkbox"/> The specification is objected to by the Examiner.</p> <p>10)<input checked="" type="checkbox"/> The drawing(s) filed on <u>29 September 2003</u> is/are: a)<input checked="" type="checkbox"/> accepted or b)<input type="checkbox"/> objected to by the Examiner.</p> <p style="margin-left: 20px;">Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).</p> <p style="margin-left: 20px;">Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).</p> <p>11)<input type="checkbox"/> The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.</p>			
Priority under 35 U.S.C. § 119			
<p>12)<input type="checkbox"/> Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).</p> <p>a)<input type="checkbox"/> All b)<input type="checkbox"/> Some * c)<input type="checkbox"/> None of:</p> <p style="margin-left: 20px;">1.<input type="checkbox"/> Certified copies of the priority documents have been received.</p> <p style="margin-left: 20px;">2.<input type="checkbox"/> Certified copies of the priority documents have been received in Application No. _____.</p> <p style="margin-left: 20px;">3.<input type="checkbox"/> Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).</p>			
<p>* See the attached detailed Office action for a list of the certified copies not received.</p>			
Attachment(s)			
<p>1)<input type="checkbox"/> Notice of References Cited (PTO-892)</p> <p>2)<input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)</p> <p>3)<input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____</p>		<p>4)<input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____</p> <p>5)<input type="checkbox"/> Notice of Informal Patent Application (PTO-152)</p> <p>6)<input type="checkbox"/> Other: _____</p>	

DETAILED ACTION

Applicants filed the Appeal brief on January 25, 2006 with two versions of claims:

Pending Claims 1-26 and Proposed Claims 1-9 and 12-27, which are under the amendment of October 13, 2005.

Upon the reconsideration of the Amendment of October 13, 2005, the Amendment of October 13, 2005 is entered. Upon said amendment the objected to/rejected claims 10 and 11 with allowable subject matter are cancelled with respect to a new independent claim 27 including the limitations of the base claim and any intervening claims.

Applicant's request for reconsideration of the finality of the rejection of the last Office action is persuasive and, therefore, the finality of that action is withdrawn.

Applicant's arguments with respect to claims 1-9 and 12-27 under the amendment of October 13, 2005 have been considered but are moot in view of the new ground(s) of rejection.

Claims 1, 25 and 27 are independent claims.

Claim Rejections - 35 USC § 102/103

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1, 3-6, 8-9, 13-15, 22, 25 and 27 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Kamath U.S. Patent 4,125,695.

Reference to Kamath had been considered in the previously office actions mailed on 09/24/2004 (first action) and 03/31/2005 (final action).

Claim 1 discloses a process for producing a high impact polystyrene comprising admixing a rubber and styrene monomer in the presence of at least two polymerization initiators and polymerizing the styrene wherein at least one initiator is a grafting initiator and at least one other initiator of said at least two polymerization initiators is a non-grafting initiator.

Claim 25 discloses a process for producing a high impact polystyrene comprising: admixing a rubber and styrene monomer in the presence of at least two polymerization initiators selected to optimize a high impact polystyrene morphology, wherein at least one of the at least two polymerization initiators is a grafting initiator and at least one of

the at least two polymerization initiators is a non-grafting initiator, and polymerizing the styrene to form the high impact polystyrene.

Claim 27 discloses a process for producing a high impact polystyrene comprising admixing a rubber and styrene monomer in the presence of at least two polymerization initiators and polymerizing the styrene wherein at least one of the at least two polymerization initiators is a grafting initiator and at least one of the at least two polymerization initiators is a non-grafting initiators selected from the group consisting of 2,2'-azobis(isobutyronitrile), 2,2'-azobis(2-methylbutyronitrile), lauroyl peroxide, decanoyl peroxide, and mixtures thereof.

Kamath discloses a process for the free radical polymerization of vinyl monomers including styrene monomer containing dissolved elastomer for producing high impact polystyrene, col. 17, lines 46-48. An elastomer is readable as a rubber in the present claims 1, 3, 25 and 27. The polymerization process is a continuous process in solution using ethylbenzene as the solvent in the presence of the initiator system containing at least two initiators, col. 3, lines 1-8; col. 14, lines 64-68; col. 19, line 30-31 and 36, for the present claims 1, 5-6, 13, 25 and 27. Ethylbenzene solvent acts as a chain transfer agent in the polymerization of styrene, col. 19, lines 36-37, for the present claims 5-6 and 22. One type of an initiator is peroxy-containing initiator, columns 7-8. Other type of initiators are polyfunctional initiators including azo-bis-isobutyronitrile, col. 6, lines 1-15. In the working example 7 at column 12, a difunctional azo initiator in combination with peroxide initiators has been used. In the working example 5 at column 11, initiators are

initiator containing azo group and other initiator is a benzoyl peroxide that have been used. Kamath discloses an initiator system comprising at least two types of initiators. The organic peroxide initiator such as 1,1-bis(t-butylperoxy)cyclohexane or ethyl-3,3 bis (t-butylperoxy)-butyrate is readable in the present claims 8-9 for being the grafting initiator. The azo-group containing initiator such as ethylene-bis(4-t-butylazo-4-cyanovalerate or azo-bis-isobutyronitrile are readable for being a “non-grafting initiator.” Although, Kamath does not use term a “non-grafting initiator,” however, the azo-bis-isobutyronitrile initiator is readable in the present claim 27 for being a non-grafting initiator. The other initiators such as lauroyl peroxide and decanoyl peroxide, col. 6, lines 5-6, are also readable for being non-grafting initiators in the present claim 27. In the process for producing high impact polystyrene, Kamath discloses grafting reactions, the amount of grafting obtained can be increased, col. 3, lines 14-15. The molecular weight-average molecular weight of polystyrene is in the range of 200,000 to 350,000, col. 4, lines 40-41. The concentration of di- or poly-functional initiator is preferably from 10 to 90%, col. 6, lines 66-68. Kamath discloses a mixture of at least two initiators. Kamath discloses two-stage polymerization process, the first stage of the polymerization was done at 90C and the second stage at 120 C, col. 9, lines 16-20, for the present claims 14-15. The statement in the present claim 25 wherein “initiators selected to optimize a high impact polystyrene morphology” is inherent in Kamath invention because Kamath discloses at least two initiators having different half-lives decompose temperature, and the resulting product is high impact polystyrene having high molecular weight. The term “optimize morphology” says nothing to a polymer

morphology. It is reasonable to presume that the selected “grafting initiator” and a “non-grafting initiator” in the present claims to “optimize a high impact polystyrene morphology” would possess the same properties for high impact polystyrene using the initiator system in Kamath invention, because Kamath discloses an organic peroxide initiator in combination with difunctional azo initiator, that are readable in the present claims. It is burden on the applicants to provide the difference in order to overcome this rejection under *In re Fitzgerald* 205 USPQ 594.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1, 3-5, 8-9, 13-20 and 24-27 are rejected under 35 U.S.C. 102(b) as being anticipated by Sosa et al U.S. Patent 4,861,827.

Reference to Sosa had been considered in the previously office actions mailed on 09/24/2004 (first action) and 03/31/2005 (final action).

Sosa discloses a continuous polymerization of high impact polystyrene using a combination of initiators including organic peroxy-containing compound and azo-containing compound, col. 3, lines 57-59 and col. 5, lines 42-68, for the present claims 1, 24, 25 and 27. Sosa'827 does not use phrase “non-grafted initiator”, however, the azo-containing initiator such as 2,2'-azo-bisisobutyronitrile is readable for being a non-

grafting initiator in the present claims 1, 25 and 27. The organic peroxide initiator such as 1,1-di(t-butylperoxy)cyclohexane is readable for being a graft initiator for the present claims 1, 8-9, 25 and 27. The continuous polymerization process can be carried out in the present of solvent, col. 2, line 38, for the present claim 5. Any morphology structure of the resultant HIPS could be obtained in Sosa'827. The term "optimize" a high impact polystyrene morphology in the present independent claim 25 is meaningless, because term "optimize" morphology does not have the definition of the desired morphology. There is no process condition or limitation in the process claims how to control a morphology for HIPS. Case law holds that while the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Geuns*, 988 F.2d 1181, 26 USPQ 2d 1057 (Fed.Cir. 1993). The high impact polystyrene morphology comprises honeycomb structures in the present claim 26 would be expected in Sosa'827 because Sosa discloses the same graft initiator and the same a non-grafting initiator, and the same high impact polystyrene. The invention as claimed, therefore, is fully anticipated by the disclosure of the Sosa'827 reference.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 2, 6-7, 12, 21-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sosa et al U.S. Patent 4,861,827 as applied to claims 1, 3-5, 8-9, 13-20 and 24-27 above, and further in view of Schrader et al U.S. Patent 5,428,106.

Sosa '827 does not disclose a chain transfer agent and a solvent specified in the present claims 2 and 6.

Schrader discloses a rubber-modified monovinylidene aromatic polymer produced in a solution polymerization of styrene monomer in the presence of rubber particle, of ethyl benzene diluent, an initiator and chain transfer agent, col. 4, lines 13-66; col. 5, lines 20-65; col. 10, lines 27-41. The combination of initiator and chain transfer agent serves as the dominant factor in controlling the rubber morphology and the rubber particle sizes, col. 10, lines 38-41..

It would have been obvious to one of ordinary skill in the art to modify the process for producing HIPS in Sosa'827 by adding a chain transfer agent, solvent and any conventional additives as disclosed by Schrader, because Sosa disclose the solution polymerization process for obtaining HIPS and the other additives (Sosa'827, col. 2, line 39) can include a chains transfer agent as a beneficial agent for controlling the rubber particle size and the rubber morphology within the rubber-modified styrene resin, Schrader, col. 5, lines 57-58.

In light of the new rejection for independent claim 27, this action is not final.

Art Unit: 1711

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Olga Asinovsky whose telephone number is 571-272-1066. The examiner can normally be reached on 9:00 to 5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Seidleck can be reached on 571-272-1078. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Olga Asinovsky
Examiner
Art Unit 1711

O. A
March 28, 2006


James J. Seidleck
Supervisory Patent Examiner
Technology Center 1700